



# SHORT-TERM PROGESTAGEN TREATMENT IN EWES DURING THE BREEDING SEASON

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## 1. OBJECTIVES

- To characterize the efficiency of oestrus synchronization with short term progestagen treatment during breeding season;
- To evaluate the eCG effect when it is used as complement to the progestagen treatment.

## 2. INTRODUCTION

In order to optimize the reproductive efficiency of the flock, especially when sheep farmers intend to use artificial insemination, it becomes necessary to apply an oestrus synchronization treatment. However, the use of hormones in the artificial control of oestrus and ovulation are not being advised and, on the other hand, the traditional progestagen treatments (13 days) are sometimes related with a decrease in the pregnancy rates.

The aim of this study was to evaluate the efficiency of short-time progestagen treatments, with or without an eCG administration, as an alternative oestrus synchronization method on ewes.

## 3. METHODS

- Twenty Ile de France (IF) and nineteen Churra da Terra Quente (CTQ) ewes were used, during the breeding season;
- At day 0 (D<sub>0</sub>) a 40 mg FGA sponge was inserted and 120 µg cloprostenol was injected in all animals;
- Five days later (D<sub>5</sub>) all sponges were removed and ewes were divided into 2 groups: group A (10 IF and 10 CTQ) treated with 250 UI of eCG and group B (10 IF and 9 CTQ) without eCG treatment;
- Onset of oestrus (first mount) was identified by 4 intact rams, with harness markers, between 24 and 72 hours after the sponges withdrawal;
- Plasmatic progesterone levels were determined by radioimmunoassay in blood samples collected biweekly from D<sub>-15</sub> until D<sub>25</sub>.
- A pregnancy diagnosis test was performed on D<sub>30</sub>, by real time ultrasonography, and the lambing date and litter size were recorded.

## 4. RESULTS

The body condition scores ranged between 3 and 3.5 (1 to 5 scale) in all the ewes.

The interaction between breed and group was not significant (P>0.05).

Before D<sub>0</sub>, all ewes had plasmatic progesterone levels compatible with normal oestrus activity.

The oestrus was identified in 32 ewes (82%) with no differences between groups or breeds. The remaining 7 ewes had low P<sub>4</sub> concentrations (< 0.5 ng/ml) between D<sub>-2</sub> to D<sub>0</sub>.

The interval between sponge withdrawal and onset of oestrus was 40.5 ± 9.6 hours, with no differences (P>0.05) between groups or breeds. However, for IF ewes, this interval tended to be shorter (37.8 ± 10.1 vs 43.3 ± 8.6 hours, P=0.10) than in CTQ ewes (Table 1).

The pregnancy rate (75%) and prolificacy (1.38) were also similar (P>0.05) between treatments and breeds (Table 1).

Table 1. Number of ewes in oestrus, interval between sponge withdrawal and first mount, pregnancy rate and prolificacy in the two sheep breeds.

group (n)	ewes in oestrus % (n)	first mount time x ± sd (hours)	pregnancy rate % (n)	prolificacy x ± sd
IF-A (10)	90 (9) <sup>a</sup>	40.9 ± 11.2 <sup>a</sup>	78 (7) <sup>a</sup>	1.20 ± 0.45 <sup>a</sup>
IF-B (10)	70 (7) <sup>a</sup>	35.3 ± 8.9 <sup>a</sup>	71 (5) <sup>a</sup>	1.29 ± 0.49 <sup>a</sup>
CTQ-A (10)	80 (8) <sup>a</sup>	46.5 ± 5.4 <sup>a</sup>	88 (7) <sup>a</sup>	1.43 ± 0.53 <sup>a</sup>
CTQ-B (9)	89 (8) <sup>a</sup>	40.0 ± 10.3 <sup>a</sup>	63 (5) <sup>a</sup>	1.60 ± 0.55 <sup>a</sup>

## 5. CONCLUSIONS

- The short-time progestagen treatment is a good method to synchronize the oestrus in sheep during the breeding season;
- 250 UI of eCG administration have no significant effects in the synchronization efficiency and in the pregnancy rate or prolificacy of the ewes;
- The short-time progestagen treatment should be used as a reproductive procedure in order to implement a fixed-time artificial insemination in both CTQ or IF sheep breeds.